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TWO NEW SPECIES OF *DRYMARIA* (CARYOPHYLLACEAE) FROM GYPSEOUS SOILS IN NORTHERN NUEVO LEON, MEXICO

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ABSTRACT

Two new species of *Drymaria*, ***D. pattersonii*** B.L. Turner and ***D. pratheri*** B.L. Turner, are described from northern Nuevo León, Mexico. The former belongs to the series *Arenarioides* of *Drymaria* where it relates to *D. axillaris*; the latter belongs to the series *Lyropetala* where it relates to *D. lyropetala*. The herbaceous elements most closely related to the latter taxon are reviewed, resulting in the elevation of *D. l.* var. *coahuilana* to specific rank as ***D. coahuilana*** (I.M. Johnst.) B.L. Turner. Three species of the *D. lyropetala* complex are reviewed and keyed, and detailed maps showing the distribution of each are provided.

KEY WORDS: Caryophyllaceae, *Drymaria*, Mexico

Duke (1961) provided an excellent revisionary study of the genus *Drymaria* in which 48 species were recognized; these were distributed among seventeen series. The two novelties described below belong to the series *Arenarioides* and *Lyropetala*. Since the latter series is a poorly known difficult group, I have attempted to reevaluate those taxa centering about *D. lyropetala* I.M. Johnst., to which *D. pratheri* B.L. Turner seems closely related. Johnston (1950), having relatively few collections at his disposal at the time of his treatment, recognized *D. lyropetala* as a variable complex with two varieties (he had no material of what is here named *D. pratheri*); var. *lyropetala*, a northern race, and var. *coahuilana* I.M. Johnst., a southern race. After examination of a much larger suite of specimens, and with some field work of my own, I conclude that the *D. lyropetala* grouping is best treated as composed of three morphogeographical taxa: *D. lyropetala*, *D. coahuilana* (I.M. Johnst.) B.L. Turner and *D. pratheri*. A key to these three taxa follows:

1. Midstem leaves mostly 3-6 mm long; seeds sparsely to moderately hispidulous, the hairs ca. 0.1 mm long or less; southern Nuevo León and northern San Luis Potosí. ..... *D. lyropetala*
1. Midstem leaves mostly 8-15 mm long; seeds moderately to densely "wirey", the hairs mostly 0.15-0.40 mm long; northern Nuevo León westwards to eastern Chihuahua. ..... (2)
   2. Sepals mostly 4-5 mm long; stems (new growth) with lower portions glandular-pubescent; seeds moderately pubescent with hairs mostly 0.1-0.2 mm long; stems strongly perennial with stout lignescent tap roots; northern

Coahuila and closely adjacent eastern Chihuahua. ..... *D. coahuilana*

2. Sepals mostly 3-4 mm long; stems glabrous; seeds densely pubescent with hairs mostly 0.3-0.5 mm long; stems weakly perennial with slender (seemingly annual) tap roots; northern Nuevo León. ..... *D. pratheri*

DRYMARIA COAHUILANA (I.M. Johnst.) B.L. Turner, *stat. & comb. nov.* BASIONYM: *Drymaria lyropetala* I.M. Johnst. var. *coahuilana* I.M. Johnst., J. Arnold Arb. 31:189. 1950. TYPE: MEXICO. Coahuila: 2 km S of Santa Elena, Sierra de las Cruces, *R.N. Stewart 567* (HOLOTYPE: GH).

Johnston, with his original description of var. *coahuilana*, noted that the stems of var. *lyropetala*, while mostly glabrous, occasionally have glandular hairs, citing the type itself as possessing these. While a smattering of hairs occur on the latter, compared to *Drymaria coahuilana* the plants are essentially glabrous, as are the other specimens I have examined of the taxon. Regardless, the seeds and smaller leaves readily distinguish *D. lyropetala* from both *D. coahuilana* and *D. pratheri*.

DRYMARIA PRATHERI B.L. Turner, *spec. nov.* TYPE: MEXICO. Nuevo León: 7 mi NE of "Las Estacas" (ca. midway between Monclova and Minas along hwy 53) on ranch road towards Lechugillal (ca. 26° 15' N, 100° 48' W), gypsum flats with *Larrea*, *Fouqueria*, *Opuntia*, and scattered *Yucca*, ca. 650 m, 18 Oct 1993, *Alan Prather 1483* (with T. Patterson and A. Hempel) (UNICATE HOLOTYPE: TEX!; FRAGMENT HOLOTYPE: MEXU!).

Drymariae lyropetalae I.M. Johnst. similis sed differt pedicellis ad maturitatum longioribus (6-10 mm longis vs. 3-6 mm longis), sepalis minoribus (ca. 3 mm longis vs. 3-5 mm longis), et seminibus dorsaliter dense pilosis trichomatibus ca. 0.3 mm longis (vs. moderate hispidulis trichomatibus ca. 0.1 mm longis vel minus).

Annual (?), weakly perennial, or seemingly annual, intricately branched herbs 15-20 cm high. Stems green, glabrous or nearly so (except for sparse scattered hair-like enations), the internodes relatively short (less than 1.5 cm long) on young shoots, 1.5-2.5 cm long on older shoots, much-branched from below and arising from very slender somewhat ligneous taproots. Leaves pseudoverticillate, linear-oblanceolate, those at midstem mostly 8-14 mm long, 0.5-1.0 mm wide, glabrous or nearly so, a pair of white lanceolate stipules at the base ca. 0.3 mm long. Flowers 5-10, arranged in terminal bracteate cymes, the pedicels 4-10 mm long, deflexed at maturity, glabrous. Sepals 5, ovate, 3-4 mm long, 2 mm wide, the margins scarious. Petals 3-5, white, ca. 2.5 mm long, 0.8 mm wide, broadly ovate in outline, the terminal portion with 8-12 lacerations, the lateral pair more pronounced, ca. 0.7 mm long. Stamens 5, ca. as long as the petals. Ovary ca. 1.5 mm high, glabrous, the styles trifid, ca. 1 mm long. Capsule globose, ca. 1.5 mm across, containing ca. 25 seeds. Seeds ca. 2.5 mm long, densely pilose dorsally with white stiff hairs ca. 0.4 mm long. Chromosome number, $n = 12$ pairs.

ADDITIONAL SPECIMENS EXAMINED: MEXICO. Nuevo León: 14 km N of Rancho Las Estacas, on road to Rancho Lechugillal, gypsum flat, 680 m, 16 Mar 1973, *Johnston et al. 10220* (LL); 30 mi SE of junction of highways 53 and 57, along highway 53 to Monterrey, gypsum flats, 22 May 1972, *Powell & Turner 2304*

(TEX); along dirt road to Espinoza from hiway 53, WNW of Monterrey, gypsum flats, 22 May 1972, *Powell & Turner 2313* (TEX); 6 mi NE of Las Estacas, on dirt road toward Lechugillal, ca. 650 m, 18 Oct 1993, *Prather 1488* (TEX).

Drymaria pratheri was first collected by the present author and A.M. Powell in 1972; the latter's collection *2304* (cited above) serves as the voucher for the chromosome number (n = 12 pairs) given in the above description. Hartman (by annotation) identified this material, and some of the other collections cited, as *D. lyropetala* var. *lyropetala*. The latter taxon is readily distinguished from D. *pratheri* by its smäller leaves and merely hispidulous achenes, as noted in the above key, but the two taxa are habitally similar, both being weakly developed glabrous perennials with slender tap roots. The seeds of *D. pratheri* are remarkably like those of *D. elata* I.M. Johnst. (ser. *Lyropetala*) and closely related suffruticose taxa (*cf.* Figure 2, Duke 1961). I have described *D. pratheri* as questionably annual, based upon the weakly developed tap root found in several collections, including the holotype, but it is probably perennial since the other taxa of the series *Lyropetala* are clearly perennial.

Drymaria pratheri occurs in gypseous soils in northeastern Mexico, as do the five other species (*D. elata*, *D. subumbellata* I.M. Johnst., *D. suffruticosa* S. Wats., *D. lyropetala*, and *D. coahuilana*) assigned to the series *Lyropetala*. The distributional relationships of three of the five taxa of this series are shown in Figure 1.

DRYMARIA PATTERSONII B.L. Turner, *spec. nov.* TYPE: MEXICO. Coahuila: ca. 1 km E of the hwy at Rancho Santa Lucia along hwy 30 between Monclova and Candela, where the road turns SE, 2.3 mi NW of the turnoff to La Carrosa, 23 mi W of the intersection with hwy 1 (ca. 26° 50' N, 100° 47' W), SW facing gypsum slopes along base of mountains, 800-900 m, 18 Oct 1993, *A. Prather 1496*, with Tom Patterson (HOLOTYPE: TEX!; Isotype: MEXU).

Drymariae axillari Brandegee similis sed differt plantis altioribus (15-20 cm altis vs. 8-10 cm altis) magis divaricate ramosisque, caulibus glabris (vs. dense glandulosis), et floribus minoribus sepalis brevioribus (2.5-3.5 mm longis vs. 3.8-5.0 mm longis).

Perennial divaricately branched glaucous herbs 15-30 cm high. Stems glabrous, usually 3-8 arising from ligneous branched roots. Leaves ovate-falcate to elliptic-lanceolate, mostly 4-6 mm long, 1.5-2.5 mm wide, glabrous except for a smattering of glands along the margins near the apices. Stipules white, lanceolate-triangular, mostly 0.5 mm long or less, glandular along the margins. Flowers axillary along the upper branches, 1 to a node, the pedicels mostly 4-6 mm long, sparsely glandular-pubescent. Sepals 2.5-3.5 mm long, 1.0-1.3 mm wide, sparsely glandular-pubescent, the margins white-scarious. Petals ca. 2.5 mm long, the basal claw ca. 1 mm long, entire, ca. 1 mm wide, the lobes ca. 1.2 mm long. Anthers cream-colored, ca. 0.7 mm long. Ovary glabrous; style ca. 0.8 mm long, 3-branched apically, the stigmas ca. 0.3 mm long. Capsules ca. 2.5 mm long; seeds hippocrepiform, ca. 0.75 mm long, 0.3 mm wide, minutely rugose-striate, more so along the medial ridge.

Drymaria pattersonii belongs to the series *Arenarioides* (containing five species, *sensu* Duke 1961) where it relates to the poorly collected *D. axillaris* Brandegee, the latter known only from Sierra de la Paila of southernmost Coahuila, where it

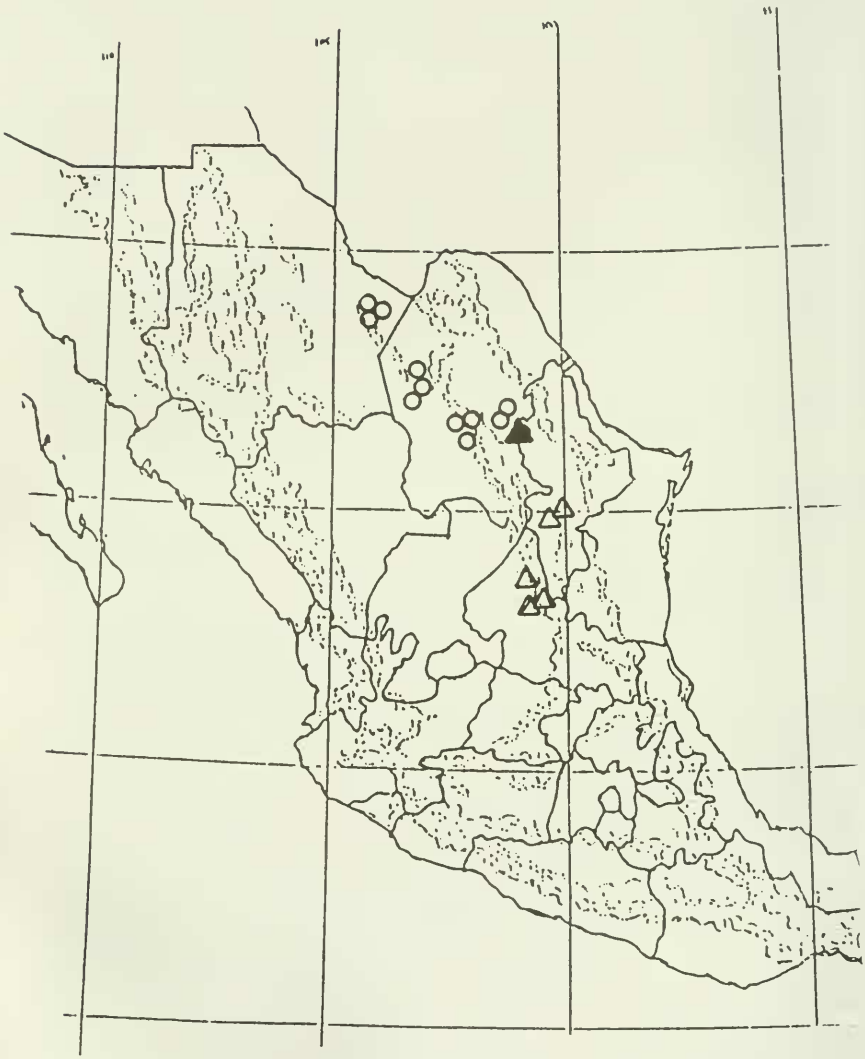

Figure 1. Distribution of *Drymaria coahuilana* (open circles), *D. lyropetala* (open triangles), and *D. pratheri* (closed triangle).

reportedly occurs among xeric shrubs and succulents dominated by *Agave lechuguilla* Torrey, *Fouquiera splendens* Engelm., and *Larrea tridentata* (DC.) Cov. *Drymaria pattersonii* might also be compared with *D. barkleyi* Duke & Steyerm. of the ser. *Arenarioides*, but the latter is smaller, having narrower more linear-oblanceolate, glabrous, leaves.

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